

CLAIMS

1. A heat-treatment apparatus for steel plate, comprising a plurality of transfer rolls for transferring steel plate in the horizontal direction and at least one induction-heating unit for heating the steel plate: the induction-heating unit being positioned between specified adjacent transfer rolls; at least an induction-heating unit, located at the most upstream side among the induction-heating units, being provided with at least one pressing roll at outlet thereof to press the steel plate from above; at least the pressing roll located at the most upstream side among the pressing rolls being positioned above and facing the transfer roll located at outlet of the induction-heating unit.

2. The heat-treatment apparatus according to claim 1, comprising at least one pressing roll to press the steel plate from above at inlet of the induction-heating unit.

3. The heat-treatment apparatus according to claim 1, wherein the pressing roll is a drive roll.

4. The heat-treatment apparatus according to claim 2, wherein the pressing roll is a drive roll.

5. The heat-treatment apparatus according to claim 1, wherein the roll has a diameter larger than half the vertical distance of an opening of the induction-heating unit.

6. The heat-treatment apparatus according to claim 4, wherein the roll has a diameter larger than half the vertical distance of an opening of the induction-heating unit.

7. The heat-treatment apparatus according to claim 1, wherein the pressing roll has electric resistance larger than that of the steel plate.

8. The heat-treatment apparatus according to claim 6, wherein the pressing roll has electric resistance larger than that of the steel plate.

9. The heat-treatment apparatus according to claim 1, wherein the transfer roll has electric resistance larger than that of the steel plate.

10. The heat-treatment apparatus according to claim 8, wherein the transfer roll has electric resistance larger than that of the steel plate.

11. The heat-treatment apparatus according to claim 1, wherein the transfer roll and the pressing roll are connected by a conductive wire with each other, thereby forming a closed circuit.

12. The heat-treatment apparatus according to claim 10, wherein the transfer roll and the pressing roll are connected by a conductive wire with each other, thereby forming a closed circuit.

13. A manufacturing line of steel plate, comprising a hot-rolling mill, an accelerated cooling unit, and the heat-treatment apparatus according to any of claims 1 to 12, on a single line.

14. The manufacturing line of steel plate according to claim

13, comprising a hot leveler positioned between the accelerated cooling unit and the heat-treatment apparatus.

15. The manufacturing line of steel plate according to claim 13, comprising a hot leveler positioned at downstream side of the heat-treatment apparatus.

16. The manufacturing line of steel plate according to claim 14, comprising a hot leveler positioned at downstream side of the heat-treatment apparatus.